

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) An apparatus for denesting articles having spaced apart circular peripheral outwardly extending rims when nested, said apparatus comprising:

a pair of elongated laterally spaced parallel rotary-members shafts, each of said rotary members shafts including at least one profile defining a curved surface sized and shaped to support the stack of the nested articles between said members shafts by engaging the rim of the lowermost article in the stack along a continuous line of contact of at least about 90° of the rim as said rotary member shafts each rotates about its longitudinal axis, and

at least one groove formed in the profile surface and sized and shaped to receive and engage a rim of the lowermost article in the stack of nested articles and denest the lowermost article from the stack.

4. (Original) The apparatus as set forth in claim 3 including a drive for counterrotating said rotary members and maintaining the grooves in synchronization at the point of denesting.

5. (Currently Amended) An apparatus for denesting cup-shaped articles having peripheral outwardly extending rims, said rims spaced apart when said articles are in a nested stack, said apparatus comprising:

a pair of horizontally disposed parallel laterally spaced counterrotatable shafts each having a profiled surface portion sized and shaped to receive the stack therebetween, to at least partially surround the lowermost article in the stack and to support the stack by engaging

the rim of said lowermost article along a portion of the rim circumference subtending an arc of at least about 90°; and

a groove formed in each profiled surface portion, said grooves sized and shaped to receive and engage the rim of the lowermost article in response to counter rotation of said shafts and to denest and separate said lowermost article from the stack.

6. (Original) The apparatus as set forth in claim 5 including a drive for counterrotating said shafts and maintaining the grooves in synchronization at the position of denesting and separation.

7. (Original) The apparatus as set forth in claim 6 wherein each shaft includes a plurality of grooves circumferentially spaced around said profiled surface, and said drive is operative to provide unidirectional rotation of said shafts.

8. (Original) The apparatus as set forth in claim 6 wherein said drive is operative to provide reciprocal rotation of said shafts.

9. (Currently Amended) The apparatus as set forth in claim 5 wherein each of said grooves has an axial length corresponding generally to the length of the surface portion and a generally V-shaped cross-section defined by a leading face and a trailing face, said leading face adapted to receive the rim of said lowermost article and said trailing face adapted to engage said rim along said arc for separation.

10. (Original) The apparatus as set forth in claim 9 wherein said leading and trailing faces intersect along a curved separating line, and a plane containing said separating line lies parallel to and offset from the axis of rotation of the shaft.

11. (Original) The apparatus as set forth in claim 5 wherein said profiled surface portions make supporting line contact with the rim in a horizontal plane above a plane through the axes of the shafts.

12. (Currently Amended) A method for denesting cup-shaped articles having peripheral outwardly extending rims which rims are spaced apart when the articles are in a nested stack, said method comprising the steps of:

(1) supporting the stack between a pair of horizontally disposed parallel laterally spaced counterrotatable shafts having opposed profiled surface portions shaped to engage the rim of the lowermost article and to support the stack of articles along a portion of the rim circumference subtending an arc of at least about 90°;

(2) providing the shafts with opposed grooves adjacent-formed in said profiled surface portions; and,

(3) counterrotating the shaft to cause the rim of the lowermost cup to enter and to be engaged by a face of said groove and to separate said cup from the stack.

13. (Original) The method as set forth in claim 12 including the steps of positioning said shafts and sizing said profiled surface portions to provide line contact with the rim of the lowermost article in a plane above and parallel to a plane containing the axes of said shafts.

14. (Original) The method as set forth in claim 13 including the step of counterrotating the shafts after separating said lowermost cup to cause profiled surface portions adjacent the grooves to engage the rim of the next cup in the stack.

15. (Original) The method as set forth in claim 14 including the steps of counterrotating the shafts in the direction of separation, and providing profiled surface portions rotationally upstream of said grooves to engage the rim of said next cup.

16. (Original) The method as set forth in claim 14 including the steps of counterrotating the shafts in the direction opposite the direction of separation.

17. (Currently Amended) An apparatus for denesting cup-shaped articles having peripheral outwardly extending rims, said rims spaced apart when said articles are in a nested stack, said apparatus comprising:

a first rotatable shaft having a profiled surface portion sized and shaped to receive and partially surround the lowermost article in the stack and to support the stack by

engaging the rim of said lowermost article along a continuous line of contact of at least about 90° of the rim periphery; and

a groove formed in said profiled surface portion, said groove sized and shaped to receive and engage the rim of the lowermost article in response to rotation of said first shaft and to denest and separate said lowermost article from the stack.

18. (Currently Amended) The apparatus as set forth in claim 17 including a second rotatable shaft laterally spaced from said first shaft and having a second profiled surface portion sized and shaped to receive and partially surround the lowermost article in the stack and to cooperate with said first shaft to support the stack by engaging the rim of said lowermost article along a continuous line of contact of at least about 90° of the rim periphery.

19. (Original) The apparatus as set forth in claim 18 including a second groove formed in said second surface portion sized and shaped to receive and engage the rim of said lowermost article and to cooperate with said first groove to engage the rim of said lowermost article in response to rotation of said second shaft to denest and separate said lowermost article from the stack.

20. (New) The method as set forth in claim 12 including the steps of providing said groove with axial lengths corresponding to the length of the profiled surface portions, and engaging the rim of the article with said face along said arc of at least about 90°.

21. (New) The apparatus as set forth in claim 17 including a bearing and guide block including a shaft bore for receiving and rotationally supporting said first shaft; and a product guiding bore extending perpendicular to the axis of said first shaft, having a diameter slightly larger than the maximum diameter of the articles, and positioned to provide lateral support for the stack of articles along the peripheries thereof unsupported by the profiled surface portion.

22. (New) The apparatus as set forth in claim 5 wherein said shafts are provided with a plurality of profiled surface portions and grooves axially spaced along said shafts to simultaneously support and denest a plurality of parallel stacks of articles.